



State of Montana
Office of Public Instruction

2012 Agency Biennial IT Report
Fiscal Year 2011-2012

August 2012

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EXECUTIVE SUMMARY

Major Accomplishments

The Office of Public Instruction made significant progress towards the goals and initiatives described in the 2010 Strategic IT Plan.

Major accomplishments on the seven goals described in the plan include:

- The initial release of the Growth and Enhancement of Montana Schools (GEMS) data warehouse;
- The establishment of an ongoing Data Governance Committee ;
- The migration of the majority of the IT infrastructure to a virtual environment;
- The engagement of a 3rd party to provide the functionality for the School Staffing project; and
- The completion of a grant application to extend GEMS to include K-20 information which resulted in a grant award of \$4.0 million.

Progress was also made in developing the agency's COOP plan, implementing established project management practices and in the agency's migration away from old technology (MS Access) to a web based environment.

Benefits

The GEMS project has completed the first of five planned releases and has already made a positive impact on Montana Schools. The system is making data available to schools in an easily understood format and for the first time, allows an easy way to analyze student data on an as needed basis. Student achievement data is currently available in the first release. Future releases will effectively make all the data that the OPI houses on students and schools available for analysis. With the release of this data, an enhanced security system is being put into place that will ensure that all Federal and State regulations are met, student data is protected and that access to confidential data is restricted to individuals who have a legitimate need to view the information.

The GEMS project has also introduced a formal data governance structure to the agency. The Data Governance Committee helps the OPI's customers, by reviewing all new data collections prior to release to make sure that the data does not already exist in the OPI and that it is being collected in a manner that places the least burden on the schools.

The School Staffing project is scheduled for release in the fall of 2012. Once this system is in place, the agency will provide a streamlined web site for teachers to apply for and renew teaching certificates.

The other major accomplishments had less direct impact on the OPI's customers, but by migrating to new technology and making the IT division more efficient, the agency will be well positioned to react to future requests.

Initiative Status

Initiative Status	Total	Fully Funded	Unfunded	Partially Funded
Completed				
Substantially Completed				
Deferred				
Delayed				
Cancelled				
Remain on-going by design	2	2		

SECTION 1: AGENCY IT PLAN ACCOMPLISHMENTS – GOALS & OBJECTIVES

Goal Number 1:

ITG 1 Longitudinal Systems Data Warehouse

Description: In this project, OPI will: (1) create an enterprise-wide data architecture to map the future for Montana's educational data systems, (2) create a data governance structure, (3) establish a data warehouse and migrate data from numerous legacy data systems to the data warehouse, and (4) implement business intelligence tools to make the data accessible for many different users.

The establishment of a data warehouse and the accomplishment of the related objectives will lay the foundation for a longitudinal data system with long-lasting benefits for public education in Montana. The creation of an enterprise-wide architecture will provide a blueprint for the data warehouse and for the consolidation, coordination and expanded use of the entire K12 educational data system. It will also chart the way to facilitate interoperability with pre-Kindergarten and post-secondary data systems.

Data will be migrated to the data warehouse from all major databases currently in use at the OPI. The consolidation of this data will allow the information to be combined and queried in ways that are now extremely labor intensive and therefore infrequently used.

Timely and accurate data and the powerful analyses made possible by the business intelligence tools will be invaluable for the State Superintendent and the OPI, the Governor and the legislature, the Montana Board of Public Education (K12), boards of trustees, administrators and teachers. It will assist in policy and resource allocation decisions.

In this project, OPI will: (1) create an enterprise-wide data architecture to map the future for Montana's educational data system, (2) create a data governance structure, (3) establish a data warehouse and migrate data from numerous legacy data systems to the data warehouse, and (4) implement business intelligence tools to make the data accessible for many different users.

Benefits: What benefits are realized and who realizes the benefits? The data warehouse is the backbone of a longitudinal data system. Such a system makes it possible to use growth models both for school accountability and for improving instruction of individual students. It will facilitate federal and state reporting, and it will allow more individualized tracking, instruction and intervention with students by teachers and administrators. In the future, this foundation will make possible parental tracking of student progress and greater public transparency of what is happening in schools. The foundation of all these beneficial outcomes for the Montana educational system is a data warehouse that makes possible a longitudinal data system.

Does this goal support the State IT Strategic Plan? If so, how? This goal supports the state goal to develop IT resources in an organized, deliberative, and cost-effective manner and the goal to improve government services.

Supporting Objective/Action

ITO 1-1 Create enterprise-wide data architecture to map the future for Montana's educational data systems.

Accomplishments: Original document is complete

Status: Completed

ITO 1-2 Create a data governance structure – The OPI will establish an internal body that will oversee changes, quality control and interpretation of the data held in the agency data stores.

Accomplishments: Data Governance committee is formed and holds regular meetings.

Status: Completed

ITO 1-3 Establish a data warehouse and migrate data from legacy data systems – In order to expose the data for use by the agency and other interested parties, a data warehouse will be created utilizing the rules established in the enterprise architecture and under the oversight of the data governance committee.

Accomplishments: The data will be moved in 5 separate iterations. Iteration 1 is complete, iteration 2 is being tested, iteration 3 is in development and iteration 4 is in requirements gathering. 50% complete for all iterations.

Status: On-going.

ITO 1-4 Implement business intelligence tools – In order to effectively use the data stored in the warehouse and to assist in the analysis and presentation of the data a robust business intelligence tool will be implemented.

Accomplishments: The business intelligence tools were implemented with the first iteration of the project.

Status: Completed

Goal Number 2:

ITG 2 Improve Network Efficiencies and Capabilities

Description: Improve network efficiencies and capabilities by implementing new technologies when older technologies no longer serve their function and the mission of the office.

Benefits: What benefits are realized and who realizes the benefits? Reduced cost, improved employee and program efficiencies, as well as customer satisfaction with related information and availability of services.

Does this goal support the State IT Strategic Plan? If so, how? This goal supports the state goal of developing IT resources in an organized, deliberative, and cost-effective manner and the state goal to improve government services.

Supporting Objectives/Actions

ITO 2-1 Utilize virtual servers and consolidate servers where applicable

Accomplishments: All new applications are implemented on virtual servers, including the new business intelligence platform. Existing applications are being moved to the virtual environment and it is anticipated that all servers will be virtual in late 2012. 75% complete.

Status: On-going.

ITO 2-2 Convert existing MS Access applications to .NET - Migrate existing MS Access

applications to .NET web/Windows applications as time, resources, and/or needs dictate.

Accomplishments: Only four applications remain in Access and these are slated for retirement in FY2013. 75% complete

Status: On-going.

ITO 2-3 Upgrade database servers to SQL 2008 - Install SQL Server 2008 on OPI's production, database servers.

Accomplishments: All OPI hosted servers have been upgraded to SQL 2008 and Server 2008.

Status: Completed.

ITO 2-4 Increase use of video streaming

Accomplishments: The OPI has successfully deployed Adobe Connect for online meetings and professional development for teachers.

Status: On-going.

Goal Number 3:

ITG 3 New application development

Description: There are several new upcoming projects that will need to have applications developed. These efforts may require purchasing an off the shelf product, some may be developed in-house, and others may require the services of a contractor. Each application will be evaluated to determine the best use of existing tools, staff, and budget.

Benefits: What benefits are realized and who realizes the benefits? The OPI is required to comply with many state and federal mandates for reporting data. The applications listed below will streamline the process and make decisions and actions based on these decisions more timely and accurate.

Does this goal support the State IT Strategic Plan? If so, how? This goal supports the state goal to develop IT resources in an organized, deliberate, and cost-effective manner.

Supporting Objectives/Actions

ITO 3-1 Develop a school staffing application - The school staffing application will integrate teacher information from several sources, including salary and benefits; educator qualifications, credentials, and experience; licensure status; and school and district personnel assignments.

Accomplishments: The OPI has contracted with Hupp Solutions to provide the software for the School staffing project. The Educator Licensure will be deployed in the fall of 2012 and the salary and benefits, and assignments parts of the project will be deployed shortly thereafter. 50% complete

Status: On-going

ITO 3-2 Replace the current web report card application with a new tool

Accomplishments: The web report card will be implemented via the business intelligence solution. The report card is being moved in pieces throughout the project and will be complete in 2012. 50% complete

Status: On-going.

ITO 3-3 Direct certification data matching - Match students in AIM with children of parents who

apply for food stamps to determine eligibility for free/reduced lunch.

Accomplishments: The OPI applied for and was recently awarded a grant to complete this project. The RFP was issued in June 2012. The project is scheduled for completion in mid-2013. 20% complete.

Status: On-going.

Goal Number 4:

ITG 4 Records Management

Description: Work with the Department of Administration, eRIM committee and the Secretary of State Office to implement an enterprise solution for electronic records management.

Benefits: What benefits are realized and who realizes the benefits? Records are easier to locate when needed, will save time and effort locating the records. Standards could be defined as to retention, metadata, archiving, classification, etc.

Does this goal support the State IT Strategic Plan? If so, how? Supports the goal to improve government services and develop IT resources in an organized, deliberative and cost-effective manner.

Supporting Objectives/Actions

ITO 4-1 Develop an electronic records management application and policy

Accomplishments: The Records Management policy is developed and under review by the OPI's Policy Leadership team. 20% complete

Status: Ongoing

Goal Number 5:

ITG 5 Project Management Office

Description: Further develop the Project Management Office (PMO) that will provide the structure needed to standardize project management practices, determine methodologies for repeatable processes, mentor other project managers as well as facilitate IT project portfolio management. Ensure IT projects are being driven by business needs and effective contract management.

Benefits: What benefits are realized and who realizes the benefits?

- Project Management: Manage Information Technology projects that meet a critical business need and have a significant budget and/or visibility.
- Project support: Provide project management guidance to project managers in the operations and business units.
- Project management process/methodology: Develop and implement a consistent and standardized process.
- Training: Conduct training programs or collect requirements for an outside company.
- Home for project managers: Maintain a centralized office from which project managers are loaned out to work on projects.
- Internal consulting and mentoring: Advise employees about best practices.
- Project management software tools: Select and maintain project management tools for use by employees.

Portfolio management: As future needs necessitate it, establish a staff of program managers who can manage multiple projects that are related, such as infrastructure technologies, desktop applications and so on, and allocate resources accordingly.

Does this goal support the State IT Strategic Plan? If so, how? This goal supports the state goal to development IT resources in an organized, deliberative, and cost-effective manner.

Supporting Objectives/Actions

ITO 5-1 Implement Best Practices - The OPI will use project management methodologies, including independent verification and validation, continuous strategic planning and system development life cycle, including testing and quality assurance.

Accomplishments: The OPI now has two project managers and are following project management best practices where applicable.

Status: On-going.

ITO 5-2 Business Process Management - The OPI will insure IT projects are being driven by business needs by utilize Business Process Reengineering (BPR) and Continuous Improvement Process (CIP).

Accomplishments: The OPI considers process improvement when projects are requested. All requests for new data or data collections go to the Data Governance Committee which reviews the impact on schools and the agency prior to approval.

Status: Completed

ITO 5-3 Effective Contract Management - Effective contract management will ensure the OPI and vendors under contract fully meet our respective obligations as efficiently and effectively as possible.

Accomplishments: Process and procedures are in place to insure effective contract management. A new contract management system is in development to make tracking contracts more efficient. 90% complete.

Status: On-going.

Goal Number 6:

ITG 6 P-20 Data Systems

Description: The focus of this goal is to address data linkages among early childhood programs, K-12 education, postsecondary institutions and the workforce development services. Specifically, this goal is intended to address Montana's remaining five required data system elements for the Data Quality Campaign:

- the capacity to communicate with higher education data systems;
- student-level transcript information, including information on courses completed and grades earned;
- student-level college readiness test scores;
- information regarding the extent to which students transition successfully from secondary school to postsecondary education, including whether students enroll in remedial coursework; and
- other information determined necessary to address alignment and adequate preparation for success in postsecondary education.

Benefits: What benefits are realized and who realizes the benefits? The P-20 data system will build on the data warehouse (see Goal 1). This goal will establish stronger links between the K-12 education data housed within the OPI and other state agency's data to allow for better analysis of student outcomes over the course of their education life. Such a system makes it possible to use growth models both for school accountability and for improving instruction of individual students. It will facilitate federal and state reporting, and it will allow more individualized tracking, instruction and intervention with students by teachers and administrators.

Does this goal support the State IT Strategic Plan? If so, how? This goal supports the state goal to develop IT resources in an organized, deliberative, and cost-effective manner and the goal to improve government services.

Supporting Objectives/Actions

ITO 6-1 Add the statewide student ID to all high school transcripts.

Accomplishments: Montana High Schools now add the statewide student ID to all transcripts.

Status: Completed

ITO 6-2 Establish data linkages among state agency partners to connect data from early childhood to K-12 to postsecondary, job training and apprenticeships and the workforce

Accomplishments: The OPI was recently awarded a grant to work on P-20 Data Systems. This project is scheduled to start in July 2012.

Status: On-going.

ITO 6-3 Create an electronic student transcript repository for K-12 education

Accomplishments: The OPI was recently awarded a grant to work on P-20 Data Systems. This project is scheduled to start in July 2012.

Status: On-going

ITO 6-4 Create an Interagency P-20 Data Governance Workgroup

Accomplishments: The OPI was recently awarded a grant to work on P-20 Data Systems. This project is scheduled to start in July 2012.

Status: On-going

ITO 6-5 Implement business intelligence and web reporting tools for users of P-20 data

Accomplishments: The OPI was recently awarded a grant to work on P-20 Data Systems. This project is scheduled to start in July 2012.

Status: On-going

ITO 6-6 Develop a system of P-20 performance measurement and reporting

Accomplishments: The OPI was recently awarded a grant to work on P-20 Data Systems. This project is scheduled to start in July 2012.

Status: On-going

ITG 7 Improve the security environment for the agency

Description: The OPI has many security policies and procedures in place and reviews them on a regular basis. With the recent adoption of the Information Security Program policy, the agency will have to take a fresh look at its security practices and implement additional process and procedures in order to comply with the new statewide policy.

Benefits: What benefits are realized and who realizes the benefits? This goal will result in a more secure environment for the data housed within the agency.

Does this goal support the State IT Strategic Plan? If so, how? This goal supports the state goal to develop IT resources in an organized, deliberative, and cost-effective manner and the goal to improve government services.

Supporting Objectives/Actions

ITO 7-1 Implement the appropriate NIST guidelines within the agency

Accomplishments: The OPI has put in place a plan that will result in compliance with the NIST guidelines. 10% complete.

Status: On-going

ITO 7-2 Institute an enterprise identity management system to control the provisioning and authentication of accounts with access to OPI data

Accomplishments: The OPI has recently adopted the Microsoft set of tools to implement identity management and is publishing a CEP for assistance in the planning phase of the project. As part of the business intelligence solution (objective 1), the agency recently put in place its own active directory forest and is utilizing the initial parts of the Microsoft solution in preparation for the overall identity management project. 20% complete.

Status: On-going

ITO 7-3 Update the disaster recovery plan and create a Continuity of Operations Plan - The OPI currently has a disaster recovery plan for an agency-specific failure, but does not have a complete Continuity of Operations Plan. The OPI will work with the Department of

Administration to prepare and test such a plan.

Accomplishments: The Continuity of Operations Plan is under development and is 50% complete. The disaster recovery plan was tested in the fall of 2011 and the associated documentation was updated.

Status: On-going.

SECTION 2: IT INITIATIVES STATUS UPDATES

Initiative 1 State Longitudinal Data System (SLDS)

Description: In this project, OPI will: (1) create an enterprise-wide data architecture to map the future for Montana's educational data system, (2) create a data governance structure, (3) establish a data warehouse and migrate data from numerous legacy data systems to the data warehouse, and (4) implement business intelligence tools to make the data accessible for many different users. This project is a four year effort beginning in 2010 and is funded via a federal grant for \$5,800,000.

EPP Number: N/A

Status: On-going. The initiative is on track to its project plan and should be complete in January 2013. The project is being implemented in phases and the first phase has been delivered and is available for use.

Funding: Funded

Initiative 2 School Staffing

Description: The school staffing application will integrate teacher information from several sources, including salary and benefits; educator qualifications, credentials, and experience; licensure status; and school and district personnel assignments. The budget for this project is \$400,000.

EPP Number:

Status: On-going. The project contracted with Hupp Information Technologies to provide the needed functionality. The effort is in development and scheduled for release in FY2013

Funding: Funded

SECTION 3: ADDITIONAL INFORMATION - OPTIONAL

Other types of information that your agency may wish to report as accomplishments or challenges related to achieving the Goals, Objectives, and Initiatives outlined in your 2010 IT plan and 2011 IT plan update.